

V. *Comparative notes on Chilades galba, Led., and phiala, Gr. Gr.* By G. T. BETHUNE-BAKER, F.L.S., F.Z.S.

[Read December 4th, 1912.]

PLATE V.

THE specific distinction of *Chilades galba* has always been more or less obscure in our collections, and it is only since the Elwes collection has been incorporated at South Kensington that its definite position has been made possible. Lederer described the species in 1855 (Z. b. V., 1855, p. 190, taf. 1, fig. 4) from Beirut, and he also stated that Kotschy obtained it at Senaar. He then compared the underside with *trochilus*, though the upperside was blue. *Phiala* was described in 1890 ("Romanoff's Memoires," IV, p. 366, t. 21, f. 4) by Groum-Grshimaïlo from Kabadian, who stated that it was very close to *galba*. The figure given in those Memoires is not very accurate, the lighter spots being decidedly too dark.

In examining these specimens the first question that arose was their generic position; they certainly had nothing to do with *lysimon*, with which I found *galba* mixed up, and they appeared to be more nearly related to *trochilus* than to anything else, though probably to be distinct from the genus containing that species. The only way to solve the difficulty was to examine the genitalia. Permission having been obtained for this to be done, it soon became evident that the two species before us occupied a peculiar position. The clasps are nearest to *Lycaena charybdis* and are very similar to those of that species; from this character its natural position would therefore be in the *arion* section in its broad sense, but the tegumen is quite Plebeid, being highly bifid and is extremely close to *Chilades laius* in its structure; the falces (hooks), however, are not quite typical of the genus *Plebeius*, whilst the aedoeagus is also very closely allied to *Chilades laius*.

It appeared to me evident at first that a new genus should be raised for the two species we are considering, but as I cannot find any structural character apart from the genitalia I am rather unwillingly constrained to place

them in *Chilades*, as I am unable to bring myself to raise genera on the male appendages only.

Having thus given a summary of the position as I now find it, it only remains to describe and figure the specimens, so as to make the information available for collectors generally.

*Chilades galba*, Led.

♂. Both wings above darkish bright blue with the termen broadly brown, in each wing near the anal angle of the secondaries there is a trace of a marginal series of three or four dark spots. Under-surface creamy grey with spots edged with white. Primaries with spots slightly darker than the ground edged with white, a narrow spot closing the cell, a series of six more or less confluent spots well beyond the cell, a double series of crescent-shaped terminal spots. Secondaries with a series of three black basal spots and one black subcostal encircled with white, the latter one being well beyond the middle of the costa and lying between veins 7 and 8; there are also two black spots at the anal angle edged with bright greenish metallic scales; the other spots are only slightly darker than the ground and are edged with white, one of which closes the cell; a series of seven irregularly placed spots beyond the cell, the first being placed below and slightly beyond the black subcostal spot, the second far out detached from the first but touching the third which is shifted slightly inwards, fourth very small, its outer white edging almost confluent with the inner white edging of the third, fifth right in again, sixth somewhat outwards, seventh right in, detached from the sixth and placed on the inner margin, a subterminal series of crescentic marks followed by a series of terminal spots. Between the irregular series and the crescentic marks the ground is more or less suffused white.

The genitalia as previously referred to are very specialised. The claspers are long and very broad for the apical half, gradually increasing in width from their origin, the upper margin being slightly arched and the lower margin waved; the apex itself is evenly excavated out for nearly all the front edge, and at the upper apex is bent round to form a long hook. The girdle is moderately upright, very narrow at first, and then expanding somewhat rapidly to its fusion with the tegumen, which is very deeply bifid, its two arms being very narrow, narrower even than the falces that are attached high up to them; these have a sharp shortly curved hook at the extremity. The fulcrum

is unusually long, inclined forwards, and rather broad; the aedoeagus irregular tapering more narrowly at the tip with a long orifice. The clasps are copiously furnished with bristles, many being very long; the arms of the tegumen have them also, but shorter, finer and much less plentifully.

*Chilades phiala*, Gr. Gr.

♂. Both wings violet blue. Primaries with the termen very narrowly brown, secondaries with the termen broadish with the marginal row of dark spots moderately distinct. Underside both wings creamy grey with the spots edged with white; primaries with a spot closing the cell, a series of six more or less confluent spots beyond the cell, not so far beyond as in *galba*, a double series of crescent-shaped terminal spots, the outer row being indefinite. Secondaries with a series of three black basal spots and one subcostal, the latter one being well beyond the middle of the costa and lying between veins 7 and 8; there are also two black spots at the anal angle edged with metallic blue scales; a spot closes the cell, a series of seven irregularly placed spots just beyond the cell, the first below and beyond the black subcostal spot, the second shifted well beyond the first, its inner white edge being confluent with the outer white edge of the first, third inwards, fourth small and shifted inwards, fifth further in, sixth slightly out, seventh well in but not detached; a series of four terminal spots which are preceded by a series of defined, sharply crescentic lunules extending from the anal angle to the costa, a very slight suffusion of white in the radial area. All the spots in both wings except the five specially mentioned are but slightly darker than the ground-colour.

The genitalia are very closely similar to those of *galba*; the front edge of the clasps instead of being evenly hollowed inside the hook is curved outwards. The tegumen is slightly longer as to its bifid processes and more hairy; the aedoeagus is decidedly stouter than in *galba*, though of the same shape; a reference to the figures will, however, show that it is about one-third broader.

Comparing the genitalia with those of *Chilades laius* (Pl. V, figs. 1—3) it will be seen that the clasps have no near affinity at all, but that the tegumen is very closely allied; in each case the tegumen is highly reduced and very highly bifid, consisting of two long thin arms, almost as narrow as the falces, ending in a fine point. In *laius* the hairs are long and very fine, the spicules from which

they arise being so fine and minute that they are invisible except under a high-power objective; in *galba* and also in *phiala*, but particularly in the latter, they are coarser, and the hairs are shorter and denser. The falces in *laius* are longer and finer than in either of the other two species, but they all have the same short, sharply upturned little hook at the tip; in *laius*, however, they are fixed well below the arms of the tegumen, whilst in both *galba* and *phiala* they are fixed so close beneath the arms as to be practically almost attached to them. The slight differences of the aedoeagus are best seen from the figure, being little more than relative size and length of the taper.

A comparison of the underside of the perfect insects at once shows the relationship with the Indian *laius*, the general pattern being very similar.

My descriptions and figures are taken from specimens in the British Museum, the one being a specimen taken in the Plain of Jenin, Palestine, by Miss Fountaine and agreeing exactly with the coloured figure of *galba* given by Lederer, and the other is from Groun-Grshimailo's type of *phiala* out of the Elwes collection and now also in the National Collection.

In the course of my examination of these specimens I found mixed with them several others which were evidently belonging to the genus *Zizeeria*, Chapman, and were either *lysimon* or *karsandra*: of one of these from Beirut I have mounted the genitalia, and it turns out to be *karsandra*. This led me to examine several in my own collection from Egypt and Algeria, all of which are *karsandra*; the range of this species will therefore be thus extended westward to this extent.

#### EXPLANATION OF PLATE V.

FIG. 1. *Chilades laius*.

2. *Chilades galba* (with the upper part of one clasp removed).

3. *Chilades phiala*.

All magnified  $\times 30$ .